

REMARKS

Claims 1-18 are pending in the current application. Claims 1, 9, 13 and 17 are independent. No claims are amended in response to the outstanding rejections.

Allowable Subject Matter

Claims 6 and 10 are objected to for being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims. Claims 6 and 10, as well as the remaining pending claims are in condition for allowance for the reasons discussed below.

Claim Rejections – 35 U.S.C. § 103

Claims 1-5, 7-9 and 11-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicant's Admitted Prior Art (hereinafter "AAPA") in view of Terry et al. (US 2004/0027997, hereinafter "Terry"). The rejection is respectfully traversed.

Neither the AAPA nor Terry, whether considered alone or in combination, disclose or suggest all of the features recited in the rejected claims. For example, the combination of references fails to disclose or suggest, a device for controlling a plurality of endpoints of a USB device, the device, comprising a plurality of buffers allocated to the plurality of endpoints, respectively; and an endpoint buffer controller for managing an exchange of packets between a host and the USB device, obtaining buffer-utilization information for each of the endpoints and adaptively adjusting at least one of: a number of the buffers allocated to each of the endpoints based upon the buffer utilization, and respective buffer capacities of the buffers allocated to each of the endpoints based upon the buffer utilization, respectively, as recited in claim 1, or the similar features recited in independent claims 9, 13 and 17.

It is admitted in the Office Action that the AAPA fails to disclose obtaining buffer-utilization information for each of the end points, or adaptively adjusting the buffer's capacity.

In an effort to overcome the admitted deficiencies, Terry is combined for allegedly teaching such features. Specifically it is alleged that Terry discloses “obtaining buffer-utilization information (status of buffer, quality indicator) for each of [the] end points (data flows to which buffers are assigned, paragraph 25).” It is further alleged that Terry discloses “adaptively adjusting the respective buffer capacities of the buffers allocated [to] each of the end points based on the buffer utilization information (calculating and setting new capacity allocations, paragraphs 16, 24-26).”

Terry relates to the exertion of flow control for data transmissions between a radio network controller (RNC) and a Node B in a third generation (3G) telecommunication system (paragraph [0001]). In Terry, a system monitors certain criteria and, if necessary, adaptively increases or decreases the data flow between the RNC and the Node B. This improves the performance of the transmission system by allowing retransmitted data, signaling procedures and other data to be successfully received at a faster rate than in prior art systems, by minimizing the amount of data buffered in the Node B. Specifically, flow control is exerted to reduce buffering in the Node B upon degradation of the channel quality, and prior to an HS-DSCH handover (paragraph [0015]). Thus, not only does Terry fail to teach or suggest adaptively adjusting a number of the buffers or respective buffer capacities based on buffer utilization, Terry actually teaches away from such a concept. Rather, Terry specifically teaches adjusting data flow (i.e., flow control) so that the Node B (buffer) is not overloaded causing the digital communication signal to degrade (see also paragraph [0033]).

For example, the Node B monitors a selected quality indicator (of a telecommunication signal) and calculates a capacity allocation for the buffer based on the selected quality indicator. The Node B signals the capacity allocation to the RNC. In response to receipt of the capacity allocation, the RNC transmits data to the Node B at a data flow rate determined in accordance with the capacity allocation and at least one predetermined criterion (paragraph [0016]).

As shown in FIG. 3A of Terry, the quality of a communication channel is monitored and

the flow of data between the RNC 52 and the Node B 54 is adjusted. The method 50 handles the transmission of data between the RNC 52 and the Node B 54. The RNC 52 transmits a capacity request to the Node B 54 (step 58). The capacity request is basically a request from the RNC 52 to the Node B 54 that the RNC 52 would like to send a certain amount of data to the Node B 54 (paragraph [0024]). The Node B 54 also monitors the status of the buffer within the Node B (step 62) to determine the amount of data within the buffer. This permits the Node B 54 to monitor the amount of data within the buffer, and also to monitor the amount of additional data the buffer may accept (paragraph [0025]).

Based on this information, the Node B 54 calculates and transmits a capacity allocation (step 64) to the RNC 52. The capacity allocation is an authorization by the Node B 54 to permit the RNC 52 to transmit a certain amount of data (i.e., controlled data flow rate). The RNC 52, upon receiving the capacity allocation, transmits the data in accordance with the allocation (step 66). That is, the RNC 52 sends data to the Node B 54, the amount of which may not exceed the capacity allocation (paragraph [0026]). Of course the amount of data stored in the buffer will change in accordance with the incoming data that is transmitted from the RNC 52 and the outgoing data that is transmitted to the UE 82 (shown in FIG. 3b). However, as clearly stated in Terry, neither the number of buffers, nor the respective buffer capacities are adaptively adjusted based on buffer utilization. Rather, in Terry, it is the flow rate of data that is adjusted (i.e., sped up or slowed down) to the buffer capacity. By doing, the quality of the telecommunication signal may be prevented from degrading. Thus, there is no teaching in Terry of adaptively adjusting at least one of a number of buffers and respective buffer capacities based on buffer utilization, as alleged in the Office Action.

Because the combination of references fails to disclose or suggest all of the claimed features, withdrawal of the rejection is respectfully requested.

Claims 17 and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over AAPA in view of Terry further in view of Georgiou et al. (US 7,003,597, hereinafter “Georgiou”). The rejection is respectfully traversed.

None of the applied references, whether considered alone or in combination, disclose or suggest all of the features of claims 17 and 18. For example, as discussed above, neither the AAPA nor Terry disclose or suggest obtaining buffer-utilization information allocated for each of the endpoints and adaptively adjusting a number of the buffers allocated to each of the endpoints based upon the buffer utilization.

Moreover, because Georgiou fails to overcome the deficiencies of the AAPA and Terry, the combination of references fails to render claims 17 and 18 obvious. Therefore, withdrawal of the rejection is respectfully requested.

CONCLUSION

Accordingly, in view of the above amendments and remarks, reconsideration of the objections and rejections and allowance of each of claims 1-18 in connection with the present application is earnestly solicited.

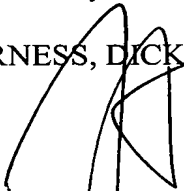
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John A. Castellano at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

HARNESS, DICKY, & PIERCE, P.L.C.

By



John A. Castellano, Reg. No. 35,094

P.O. Box 8910
Reston, Virginia 20195
(703) 668-8000

JAC/JWF:akp